I-Team Framework
Orthophotography Workgroup

May 17, 2004 Meeting

Location: Indiana Government Center South Building, Training Center, Training Room 2 10am-3:00pm

1. Collected sample Orthophotography RFP's from Spatial Marvels, Region 15 Planning Commission, Kosciusko County, Hamilton County, State of Virginia, State of West Virginia, State of Tennessee, and (later) State of New York.
2. Draft schedule of events
    a. end goal: November for signature process (6 months from procurement receipt of specs), estimated milestone dates (NOTE: THIS IS UPDATED AS PER REQUIREMENT FOR 60 DAY WAITING PERIOD AFTER PERSPECTIVE BIDDERS MEETING BEFORE RELEASE OF RFP):
        i. Draft specs to State Procurement: Monday June 7, 2004
        ii. Prospective Bidders Meeting: Monday June 7, 2004 (or week of June 7-11 ??)
        iii. State / Local Letters of Intent for Buy-Up Options: Friday July 30, 2004
        iv. RFP Release: Friday August 6, 2004 (60 days from Prospective Bidders Meeting)
        v. RFP Response Due Date: Wednesday September 15, 2004 (28 days on street)
        vi. Begin Evaluation Process: Thursday September 16, 2004
        vii. Submission of "Short List" to Procurement: Wednesday, October 13, 2004
        viii. Vendor Interview Dates: (week of) Monday, November 1, 2004
        ix. Final Ranking/Vendor Selected: Friday, November 5, 2004
        x. Contract Award Date (approximate): Friday, November 12, 2004

    b. 2 RFPs to go out (? Or one RFP, vendors can bid on either or both, but can only be awarded one)
        i. data acquisition, project management, etc.
        ii. QA/QC; delivery acceptance testing
    c. Specifications
        i. June 1st submit specs to procurement
    d. pre-bid meeting (look at time frame - Roger)

    e. time from procurement receipt of specs to draft RFP?
    f. RFP (3 wk minimum on street)
3. general requirements
    a. performance-based specifications
    b. multi-resolution by county
    c. USE OF EXISTING COUNTY DEM – we need to consider options here for writing this into the contract
        i. Preference to use existing DEM if provided by county?
4. Buy-up options:
    a. higher resolution (from counties and state, we need to require letter of intent for buy-up by June 15, 2004 for consideration) includes re-sampling to the lower resolution designated by the original program (and resample to 1 meter statewide)
    b. counties that have existing DTM could be used
    c. counties that don't have DTM will need to either have new DTM created, or accept less accuracy (?) – NEEDS FURTHER DISCUSSION (digital acquisition could resolve the problem of counties wanting high resolution that don't have the DTM to support the accuracy requirements)
5. The program as envisioned will offer a set of buy-up options for local and/or state participation. Buy-up options – although not required, we encourage the inclusion of all or any of the following to be presented as buy-up options and/or additional deliverables (not as buy-up):
    a. Additional color-IR band / multi-spectral (?) terms and conditions should include that this delivery cannot affect the delivery schedule to counties
    b. Digital surface model
    c. Projection / coordinate system variations from State Plane E/W (e.g., delivery in UTM)
    d. Vendor can provide options for other resolutions and/or accuracies (e.g., higher resolution with accuracy requirements of 1 meter)
    e. Accelerated delivery
    f. other
6. area of coverage
    a. State of Indiana plus 1000' overlap around state boundary, specific area definition for Lake, Porter, and LaPorte (to be defined by counties) and to include both banks of the bordering rivers
7. special terms and conditions
    a. Women and Minority owned businesses (refer to State Procurement and State Minority and Women Business Office for guidance)
8. scope of work
9. project extent
10. performance criteria / product specifications
11. projection / coordinate system
    a. State plane Indiana E or W, NAD 83, US Survey Foot, as per Indiana Code: ____

12. accuracy requirements

13. Horizontal Accuracy Requirements
14. NAD 83; 1997 (HARN)
15. DEM to be used: vendor determined (county provided where available)
16. Standard to be used: FGDC Geospatial Positional Accuracy Standards: National Standard for Spatial Data Accuracy (we will use GSD and RMSE Accuracy as requirements in the RFP).

Photo resolution (Ground Sample Distance (GSD, or pixel size))	Scale (for reference only)	Design Scale (for reference only)	**RMSE Accuracy**	Approximate file sizes per square mile
1 meter	1:12,000	1"=1,000'	**+/- 25' or 7 meters???**	7.4 mb/mi2 uncompressed
1 foot	1:2400	1"=200'	**+/- 5'**	79.8 mb/mi2 uncompressed
6"	1:1200	1"=100'	**+/- 2.5'**	319 mb/mi2 uncompressed

17. Project Control and Orientation
    a. Project control
    b. Ground control requirements
    c. Procedures
    d. Processing
    e. Vertical Accuracy Requirements –
    f. The DTM developed for this project shall be of the quality required to support development of digital orthophotography
        i. Tell us what vertical accuracy is proposed
        ii. Is a surface model part of your deliverable?
    g. Digital Terrain Model (DTM)
18. imagery type
    a. natural 24 bit true color
    b. color balancing
    c. images should appear seamless with respect to color balance, saturation, hue
19. temporal requirements (leaf-off; Spring 2005; 30% sun angle or greater; no snow cover)
20. overlap (front and side)
21. file type / tile scheme / tile size by resolution / mosaics
    a. TIFF
        i. GeoTIFF or TIFF w/world file
    b. Compression
    c. Tile size
        i. 1 meter tiling system (quarter quad)
        ii. 1ft tiling system (2500 ft x 2500 ft (or by PLSS section / quarter section?)
        iii. 6" tiling system (2500 ft x 2500 ft)

    d. Mosaics
        i. County, rectangular encompassing entire county, maybe more than one

22. QA/QC Specifications
    a. Need to provide the QA/QC specifications (need to define authority of State and counties in this process)
    b. Authority to accept / reject product ultimately resides with whom? (QA/QC vendor or IGIC or State?)
23. Delivery and distribution (counties, QA/QC vendor, state)
    a. DVD to counties (1 set to state?)
    b. USB 2.0 external hard drive option to counties / state
    c. other
24. Metadata (to include methodologies used for compression)
    a. Require submittal of flight logs
    b. Anna supplied sample metadata record
25. Contingency Plans:
    a. Delivery time schedule
    b. Collect imagery
    c. Process
    d. Delivery
    e. staggered delivery schedule – goal to begin within a 6month window of data acquisition and end within 12 month window of data acquisition (12 months top end of goal, expectations should be set for later if the product is rejected due to specs and acts of nature)
    f. Back-up plan for non-acquisition coverage
    g. Recourse for rejected product
26. Need to manage expectations
    a. Orthos aren't the entire GIS system
    b. Minimum computer requirements for viewing / using orthos:
        i. Hard drive to accommodate file sizes (see estimates above)
        ii. Free viewers available (check file types for compatibility with existing systems)
        iii. DVD drive
        iv. High speed USB 2.0 if using external USB fire wire hard drives
    c. IMPORTANT – Incorporate message into educational seminars re: delivery schedule, i.e. significant lag time for delivery
    d. Educational issue: resolution and accuracy – what do they mean and what's the difference?

SUPPLEMENTAL MATERIALS FOR INFORMATIONAL PURPOSES ONLY

National Digital Orthophoto Standards:
http://rockyweb.cr.usgs.gov/nmpstds/doqstds.html

Last year's National Argricultural Imagery Program Request for Proposal:
http://www.apfo.usda.gov/contracting/NAIPMstr-Sol%203-04.pdf

The following exceed New York State requirements for tax maps: their 2 ft GSD ortho products have an accuracy of +/- 8 ft at the 95% confidence level, while the 1 ft GSD products have an accuracy of 4 ft at the 95% confidence level.

According to the FGDC Parcel Core Standard, 1-foot resolution is the minimum desired resolution for parcel mapping. (It does not indicate accuracy requirements – double check!!!).

The Census Bureau's MAF/TIGER Enhancements Program seeks to achieve a high level of map coordinate accuracy in TIGER by acquiring and using, as a first priority among data sources, digital files prepared and provided by state, local and tribal governments. The Census MAF/TIGER Accuracy Improvement Project spatial accuracy requirement is 7.6 meters, for data provided without royalty or copyright restriction.

The Census Bureau is bound by the confidentiality provisions of Title 13, United States Code, which is the collective set of laws passed by the Congress over several decades. Title 13 requires, among other things, that information about individuals and establishments (including their addresses and/or specific locations) cannot be disclosed (except in the form of statistical totals) to anyone who has not agreed to abide by these restrictions. Thus, much to the annoyance of some who participated in the Local Update of Census Addresses (LUCA) program conducted as part of Census 2000, only those local and tribal officials who agreed to sign a Confidentiality Agreement could review the Census Bureau's address information, and they could not retain or use that information for any local purpose.

Regarding Census partnership and creation of additional GIS data…Others have suggested the Census Bureau "cannot [will not] partner with states for data" because the Census Bureau is not a fund-granting agency. This perspective ignores the fact that the Census Bureau has a well-documented history of negotiating agreements that involve "in kind" transfers of services and/or products with partner agencies. For example, as part of the MTAIP, if a government has highly accurate imagery, but cannot afford the feature extraction cost to transform that imagery into GIS files, the Census Bureau will include the availability of that imagery in its TED data base. Under the assumption that use of this existing imagery is the most cost effective solution, the contractor will use that imagery to reposition and update TIGER. The Census Bureau returns a repositioned TIGER/Line or equivalent file to the imagery donor. Thus, the Census Bureau achieves its objective, the donor achieves their objective, neither agency has spent more than it originally had intended, and no funds actually needed to change hands.

FGDC Content Standards for Digital Orthoimagery
http://www.fgdc.gov/standards/status/sub3_6.html

FGDC Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998
http://www.fgdc.gov/standards/status/sub1_3.html
*The U.S. Geological Survey, Geography Discipline, has submitted a proposal to revise Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998 (NSSDA). The FGDC welcomes comments on the proposal.**